



Supporting the ethical development and stewardship of seed

Twelve Reasons Why Genetically Engineered Alfalfa Threatens Organic Farming

The threat of contamination to organic seed and crops is real, and risks compromising livelihoods, genetic integrity, and faith in the organic label. Below are talking points for why genetically engineered alfalfa is a serious concern for many organic seed, hay, and livestock producers, and the farmers and customers who rely on organic as an alternative to products derived from genetic engineering.

- **CONTAMINATION**

1. Roundup Ready alfalfa will contaminate organic alfalfa seed and hay. Contamination is even more likely in alfalfa because it is a perennial field crop – it's in the ground for years – and bees and other pollinators can transfer transgenic pollen miles from its source. From seed to feed, contamination reduces choice for organic farmers. Organic dairy, beef, and other livestock producers already have limited organic feed options because corn and soybeans are pervasively contaminated with genetically engineered (GE) material. Certified organic alfalfa growers risk losing the genetic purity of their seed and premiums for their products if transgenic material transfers from GE alfalfa fields to their own.

2. Contamination events have been recorded between GE and non-GE alfalfa. After GE alfalfa was first approved in 2005, contamination was identified within a year of commercial production. The Idaho Alfalfa and Seed Clover Association reported that the Roundup Ready (RR) alfalfa trait was found in conventional (non-GE) alfalfa seed in Montana, Wyoming, and Idaho, including seed used for breeding. The same year, Colorado State University Extension tested feral alfalfa plants along roadsides and abandoned fields within two miles of RR alfalfa seed fields and found RR traits at 83 percent of the 23 collection sites.¹ Even before RR alfalfa was released, studies found complete containment was not possible. Kansas State University studied alfalfa pollen drift and found that containing transgenic traits within alfalfa seed or hay production fields would be unlikely using current production practices.² Research by Monsanto and Forage Genetics found that honey bees transferred the RR trait miles from field trials.³

3. GE alfalfa can enter a farmer's field through several routes. Not only can transgenic pollen travel from a neighboring farm via wind or pollinating insects, volunteer plants – crops that persist without deliberate cultivation – can show up in fields a year or more after the original crop was grown. Alfalfa seed has a high percentage of "hard seed" that can remain dormant in the ground for years before germinating. The perennial nature of alfalfa makes containing the GE trait even more difficult.

4. Monsanto asserts that cross-pollination between alfalfa hay fields is not a threat. Although hay producers attempt to harvest alfalfa before high percentages of bloom, weather and other factors dictate when hay can be harvested – meaning some percentage of hay fields produce



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viable pollen that can be transferred to surrounding fields. Farmers can neither control weather nor the movement of pollen.

- **INCREASED PRODUCTION COSTS**

5. GE alfalfa will increase the cost of organic alfalfa seed and hay. Testing organic alfalfa for GE material will lead to increased costs for seed producers. Insurance companies will not cover contamination events. That is, farmers who don't use or benefit from GE alfalfa shoulder the cost of testing for (and eradicating when found) unwanted GE material in their seeds and products, as well as costs associated with losing an organic premium price. Some organic alfalfa producers will either look to foreign sources for organic seed, the transportation of which is costly, or switch to a different, less cost-effective forage protein source for organic livestock. Widespread contamination means some organic alfalfa seed and hay producers would discontinue alfalfa production. Most foreign seed markets for seed grown in the U.S. reject contaminated seed.

6. GE alfalfa will increase the cost of organic milk and beef. The dairy industry is the leading user of alfalfa. Organic dairy production increased by 575 percent between 1997 and 2005.⁴ The demand for organic feed at times outstrips the domestic supply, and increases the need to protect organic alfalfa from GE alfalfa contamination. People who buy organic products derived from alfalfa may see prices increase in the face of widespread contamination.

- **GE ALFALFA THREATENS THE INTEGRITY OF ORGANIC FOOD**

7. Customers of organic food demand zero tolerance of transgenic food. For consumers, the USDA organic label represents a statement that the product is free of transgenic material. The inability to keep transgenic material out of organic seed and food is reducing the integrity of organic products, and inhibits the growth of this vibrant industry. Organic farmers depend on access to GE-free seed to meet organic standards and consumer demand.

- **GE ALFALFA EXPANDS MONSANTO'S GRIP ON FARMS & FOOD**

8. Patents on GE technologies transfer unfair liability risks to farmers. Many liability questions remain unanswered by our regulatory and judicial systems, including who should pay for damages caused by unwanted transgenic material and who owns seed contaminated by patented traits. Unless laws and regulations are reformed, farmers who don't plant RR crops are responsible for protecting their fields from transgenic contamination. USDA does not require RR alfalfa growers to plant buffer areas. Monsanto enforces an egregious contract called a Technology Agreement that shields the company from liability.⁵

9. GE alfalfa tightens Monsanto's grip on American farms and farmers. Monsanto is the largest seed company in the world. Its patented transgenic traits are in more than 90 percent of U.S. soybeans and cotton planted, and more than 80 percent of U.S. corn.⁶ Adding another major



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field crop to the line of Roundup Ready products tightens Monsanto's monopoly over a large segment of our seed and food.

- **GE ALFALFA INCREASES HERBICIDE USE**

10. Most alfalfa producers do not rely on herbicides. Herbicide use has increased by 383 million pounds between 1996 (when RR crops were introduced) and 2008.⁷ The National Center for Food and Agriculture Policy estimates that RR alfalfa could result in the application of an additional 200,000 pounds of herbicides a year in California alone.⁸ Nationally, USDA estimates that the deregulation of RR alfalfa will result in the application of an additional 23 million pounds of herbicides annually. Furthermore, Roundup Ready alfalfa will exacerbate the problem of Roundup-resistant weeds, which has led to higher rates of toxic chemicals entering the environment and worse weed problems for farmers. The RR trait is a short-lived technology that only exacerbates weed problems and harms the health of the environment and eaters alike.

- **REGULATORY FRAMEWORKS FAIL TO PROTECT ORGANIC INTEGRITY**

11. Meaningful policy change is long overdue. Although both the organic and biotechnology industries acknowledge that transgenic material is moving into fields and markets where it is not allowed or wanted, little has been done to address the problem through regulatory processes and enforcement. No new law has been created to address this novel technology. Instead, the government relies on a patchwork of existing laws – most of which predate the technology – and three agencies' subjective interpretation of their roles under these laws.

12. Organic and non-GE farmers are not protected. Organic and other non-GE farmers have no mechanism for recouping economic and agronomic damages caused by contamination. The "Seven Steps to Fair Farming" principles, created by the National Organic Coalition, must be turned into a comprehensive GMO contamination prevention plan to provide transparency, fairness, and true choice in non-GE seed and food.⁹

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¹ Hammon, B., C. Rinderle, and M. Franklin. 2006. Pollen Movement from Alfalfa Seed Production Fields, Colorado State University Extension, at <http://trasam.colostate.edu/PollenMovement.shtml>.

² St. Amand, P. C., Skinner, D. Z., & Peadar, R. N. 2000. Risk of alfalfa transgene dissemination and scale-dependent effects, *Theoretical and Applied Genetics*, 101, 107-114, at <http://www.isb.vt.edu/brarg/brasym95/amand95.htm>.



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³ Monsanto and Forage Genetics International. 2004. Petition for Determination of Nonregulated Status: Roundup Ready Alfalfa (*Medicago sativa* L.) Events J101 and J163, Petition # 04-AL-116U, at http://www.aphis.usda.gov/brs/not_reg.html.

⁴ USDA, Economic Research Service. Data sets: Organic production, at <http://www.ers.usda.gov/Data/organic/>.

⁵ Download the Technology Agreement at www.westernfarmerservice.com/pdf/Corn/2009MTSA.pdf.

⁶ Hubbard, Kristina. 2009. *Out of Hand: Farmers Face the Consequences of a Consolidated Seed Industry*, National Family Farm Coalition.

⁷ Benbrook, Charles. 2009. *Impacts of Genetically Engineered Crops on Pesticide Use: The First Thirteen Years*, The Organic Center, http://www.organic-center.org/science.pest.php?action=view&report_id=159.

⁸ National Center for Food and Agriculture Policy. 2002. *Plant biotechnology: Current and potential impact for improving pest management in U.S. agriculture: An analysis of 40 case studies, herbicide tolerant alfalfa*, at www.ncfap.org/40CaseStudies.htm.

⁹ Download "Seven Steps to Fair Farming" at www.nationalorganiccoalition.org.